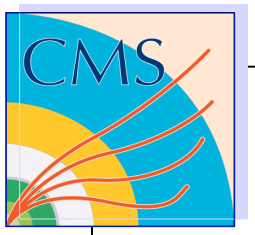


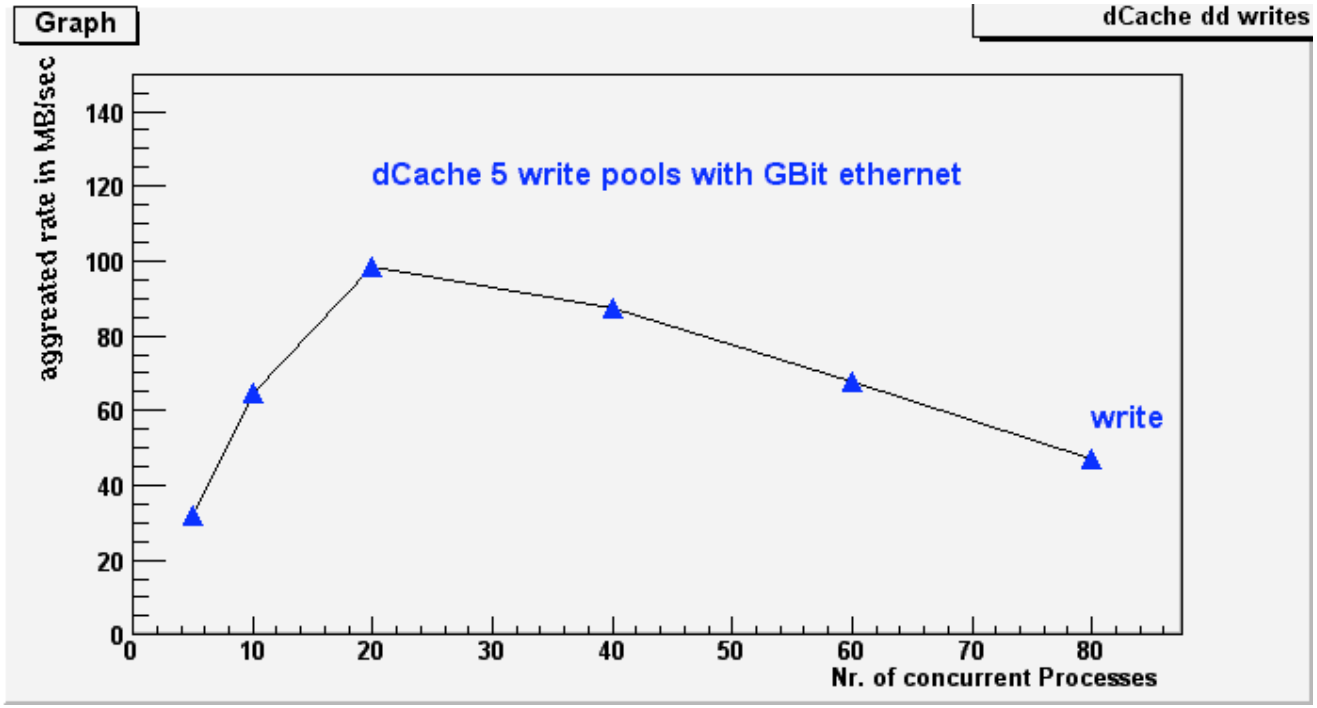
Some Results with dFarm

Hans Wenzel Fermilab

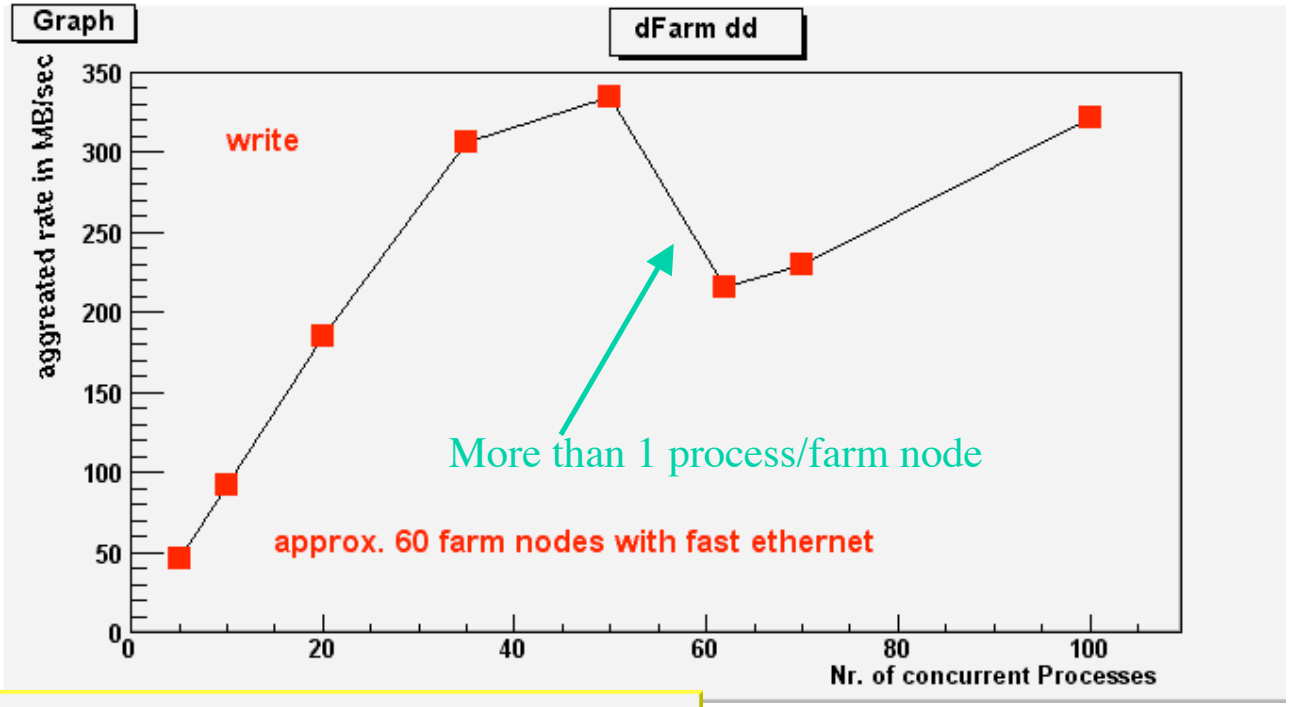
- Comparing apples with peaches! (what's wrong with that?)
- This is a follow up on Igor's talk 2 weeks ago. We have installed dFarm on one of our farms consisting of approx. 60 nodes (3 Generations: popcrns, fry's, hotdogs) all the nodes have Fast Ethernet and we are using the local IDE disks for dFarm.
- The dCache Plot is just a reference plot. The dCache system consists of 5 servers with Gbit Ethernet, raid arrays. dCache software and OS need upgrading after the upgrades we hope for better performance.
- The tests are done in the following way: batch jobs are synchronized so that they transfer files simultaneously from local disk into dfarm/dCache. Each job writes 10 1GByte files. Time is measured from the start until all jobs are finished. The slowest batch job determines the time! There is no other activity on the farm.

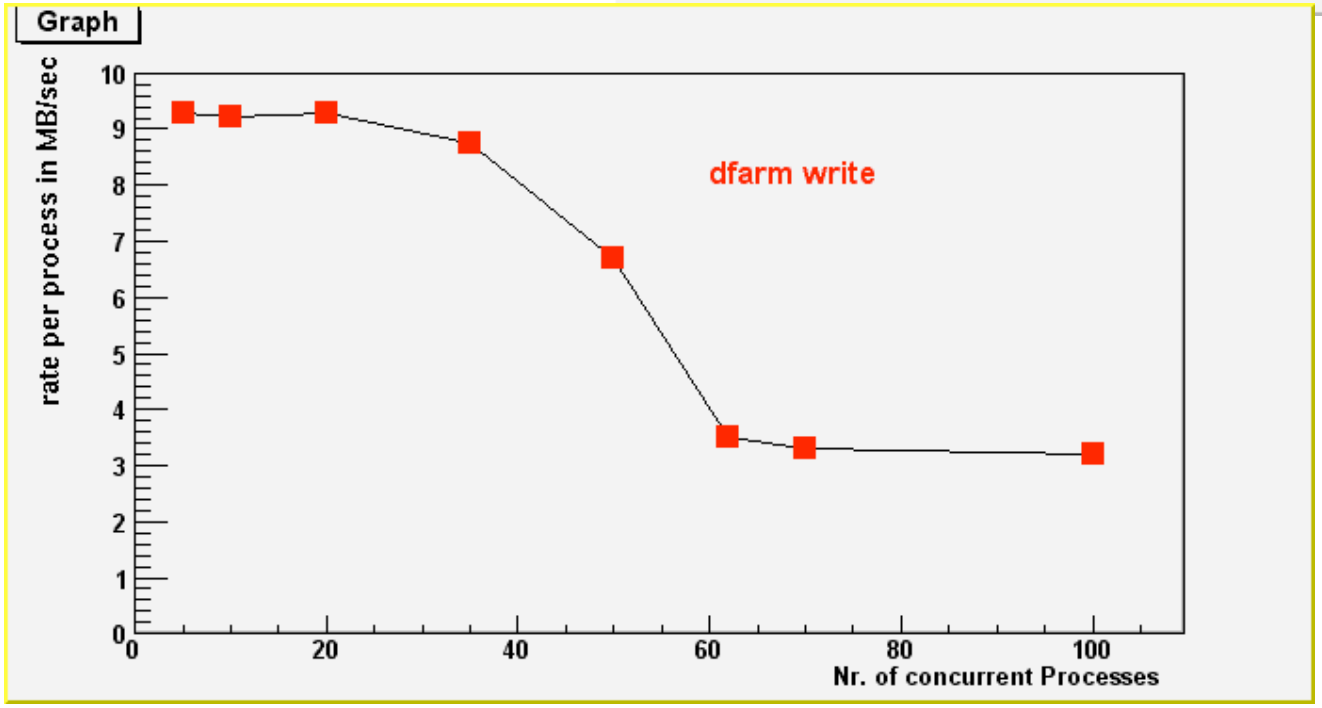
dCache

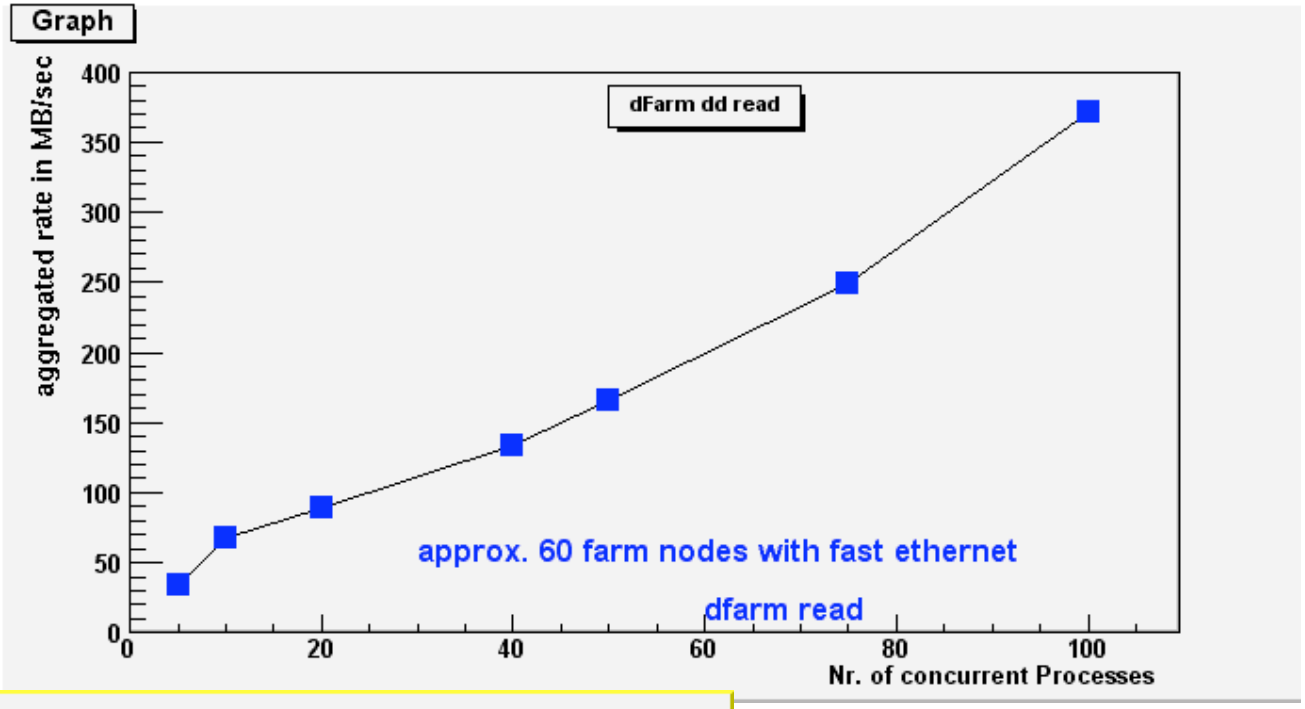
Currently performance degrades when too many processes Write into the system simultaneously. The next version of dCache promises better load balancing. (we expect the Curve too be flat)

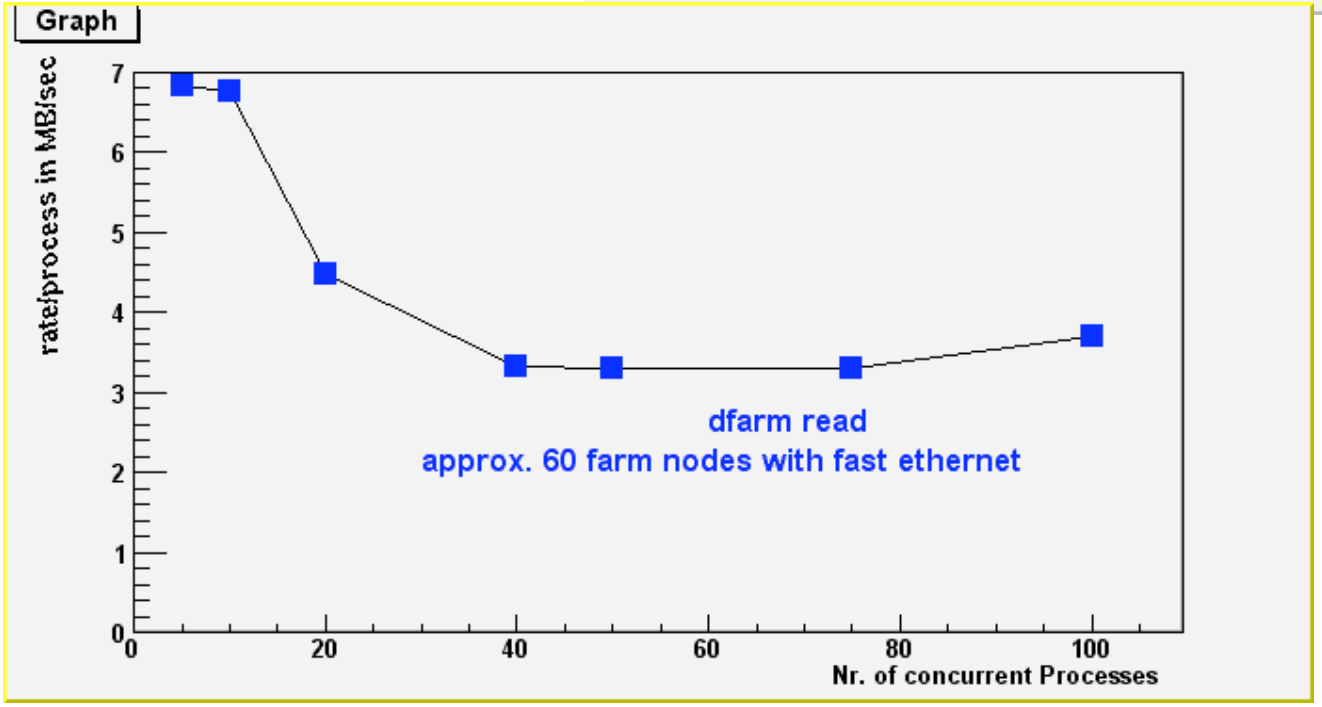


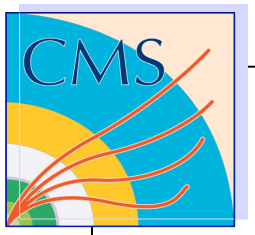
dfarm


Graph
dFarm dd
aggreated rate in MB/sec
write
More than 1 process/farm node
approx. 60 farm nodes with fast ethernet
Nr. of concurrent Processes


Graph
rate per process in MB/sec
dfarm write
Nr. of concurrent Processes


Graph
dFarm dd read
aggregated rate in MB/sec
0
50
100
150
200
250
300
350
400
0
20
40
60
80
100
Nr. of concurrent Processes
approx. 60 farm nodes with fast ethernet
dfarm read


Graph
rate/process in MB/sec
0
1
2
3
4
5
6
7
0
20
40
60
80
100
Nr. of concurrent Processes
dfarm read
approx. 60 farm nodes with fast ethernet



Conclusions

- We have ways to make the local disk space available and useful. (dFarm, dCache, drm?)
- dFarm works and shows good performance.
- dCache will be benchmarked again after the upgrades to OS and dCache software are completed.
- When available we will install dCache on the same farm as dfarm and compare the two systems on the same hardware. (compare apples with apples)
- For more info on dCache and dfarm see the slides from 2 weeks ago.